

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): In a WDM communication system, apparatus for compensating for chromatic dispersion in a WDM signal, said apparatus comprising:

a first dispersion compensating fiber traversed by said WDM signal, said first dispersion compensating fiber pumped with pump energy to induce Raman amplification of said WDM signal; and

a second dispersion compensating fiber in cascade with said first dispersion compensating fiber; ~~fiber~~, and

a first laser pump providing pump energy on a first wavelength to said first dispersion compensating fiber and said second dispersion compensating fiber; and

wherein said first dispersion compensating fiber has a fixed length and said second dispersion compensating fiber has a variable length; and

wherein said pump energy provided by said first laser pump traverses said second dispersion compensating fiber before entering said first dispersion compensating fiber via a Bragg fiber grating that reflects optical energy at said first wavelength and transmits other optical energy.

Claim 2 (original): The apparatus of claim 1 further comprising a gain-flattening filter connected between said first dispersion compensating fiber and said second dispersion compensating fiber.

Claim 3 (original): The apparatus of claim 1 further comprising an attenuator connected between said first dispersion compensating fiber and said second dispersion compensating fiber.

Claim 4 (original): The apparatus of claim 1 further comprising a power control loop that performs power measurements on output of said second dispersion compensating fiber and adjusts a power level of pump energy directed to at least one of said first dispersion compensating fiber and said second dispersion compensating fiber.

Claim 5 (cancelled)

Claim 6 (currently amended): The apparatus of claim 1 ~~5~~ further comprising a second laser pump providing pump energy on a second wavelength to said first dispersion compensating fiber and said second dispersion compensating fiber.

Claim 7 (currently amended): The apparatus of claim 1 ~~5~~ wherein said pump energy provided by said first laser pump traverses said first dispersion compensating fiber before entering said second dispersion compensating fiber.

Claim 8 (cancelled)

Claim 9 (currently amended): In an optical communication system, a method for compensating for chromatic dispersion in an optical signal, said method comprising:

passing said optical signal through a first dispersion compensating fiber and then through a second dispersion compensating fiber;

pumping said first dispersion compensating fiber with pump energy to induce Raman amplification of said optical signal therein; and

pumping said second dispersion compensating fiber with pump energy to induce Raman amplification of said optical signal therein; and

employing a first laser pump providing pump energy on a first wavelength to said first dispersion compensating fiber and said second dispersion compensating fiber; and

wherein said first dispersion compensating fiber has a fixed length and said second dispersion compensating fiber has a variable length; and

wherein said pump energy provided by said first laser pump traverses said second dispersion compensating fiber before entering said first dispersion compensating fiber via a Bragg fiber grating that reflects optical energy at said first wavelength and transmits other optical energy.

Claim 10 (original): The method of claim 9 further comprising filtering said optical signal between said first dispersion compensating fiber and said second dispersion compensating fiber for equalization of spectral content of said optical signal.

Claim 11 (original): The method of claim 9 further comprising attenuating said optical signal between said first dispersion compensating fiber and said second dispersion compensating fiber.

Claim 12 (original): The method of claim 9 further comprising:
performing power measurements on output of said second dispersion compensating fiber;
and
adjusting a power level of pump energy directed to at least one of said first dispersion compensating fiber and said second dispersion compensating fiber in response to said power measurements.

Claim 13 (cancelled)

Claim 14 (currently amended): The method of claim 9 ~~13~~ further comprising employing a second laser pump providing pump energy on a second wavelength to said first dispersion compensating fiber and said second dispersion compensating fiber.

Claim 15 (currently amended): The method of claim 9 ~~13~~ wherein said pump energy provided by said first laser pump traverses said first dispersion compensating fiber before entering said second dispersion compensating fiber.

Claim 16 (cancelled)

Claim 17 (currently amended): In an optical communication system, apparatus for compensating for chromatic dispersion in an optical signal, said method comprising:
means for passing said optical signal through a first dispersion compensating fiber and then through a second dispersion compensating fiber;

means for pumping said first dispersion compensating fiber with pump energy to induce Raman amplification of said optical signal therein; and

means for pumping said second dispersion compensating fiber with pump energy to induce Raman amplification of said optical signal therein; and

means for employing a first laser pump providing pump energy on a first wavelength to said first dispersion compensating fiber and said second dispersion compensating fiber; and

wherein said first dispersion compensating fiber has a fixed length and said second dispersion compensating fiber has a variable length; and

wherein said pump energy provided by said first laser pump traverses said second dispersion compensating fiber before entering said first dispersion compensating fiber via a Bragg fiber grating that reflects optical energy at said first wavelength and transmits other optical energy.

Claim 18 (original): The apparatus of claim 17 further comprising means for filtering said optical signal between said first dispersion compensating fiber and said second dispersion compensating fiber for equalization of spectral content of said optical signal.

Claim 19 (original): The apparatus of claim 17 further comprising means for attenuating said optical signal between said first dispersion compensating fiber and said second dispersion compensating fiber.

Claim 20 (original): The apparatus of claim 17 further comprising:

means for performing power measurements on output of said second dispersion compensating fiber; and

means for adjusting a power level of pump energy directed to at least one of said first dispersion compensating fiber and said second dispersion compensating fiber in response to said power measurements.

Claim 21 (cancelled)

Claim 22 (currently amended): The apparatus of claim 17 ~~21~~ further comprising means for employing a second laser pump providing pump energy on a second wavelength to said first dispersion compensating fiber and said second dispersion compensating fiber.

Claim 23 (currently amended): The apparatus of claim 17 ~~21~~ wherein said pump energy provided by said first laser pump traverses said first dispersion compensating fiber before entering said second dispersion compensating fiber.

Claims 24-26 (cancelled)